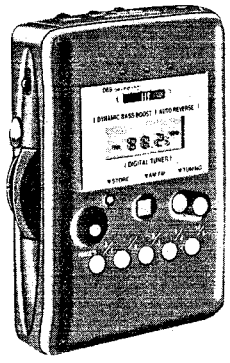
Digital Radio Cassette Player AQ6529/00/01

Service
Service
Service



ServiceManual

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RECYCLED PAPIER

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

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PHILIPS

PHILIPS

SPECIFICATIONS

GENERAL

Battery		: DC 3V (R06 x 2)
Max. current drain		: < 155 mA
Headphone impedance		: 32 ohm
Output power (10% THD)		: > 10 mW
DBB	Med.	: 6 dB
	Max.	: 10 dB

CASSETTE

Tape speed		: 4.76 cm/s ± 2%
Wow & flutter		: < 0.5%
Torque	Play	: 20 - 60 gm.cm
	F.F./REW	: 50 - 150 gm.cm
Fast winding time (C60)		: < 180 sec.
Frequency response		: 125 - 8,000 Hz
S/N ratio	unweighted	: > 40 dB
Distortion		: < 3%

TUNER - FM section

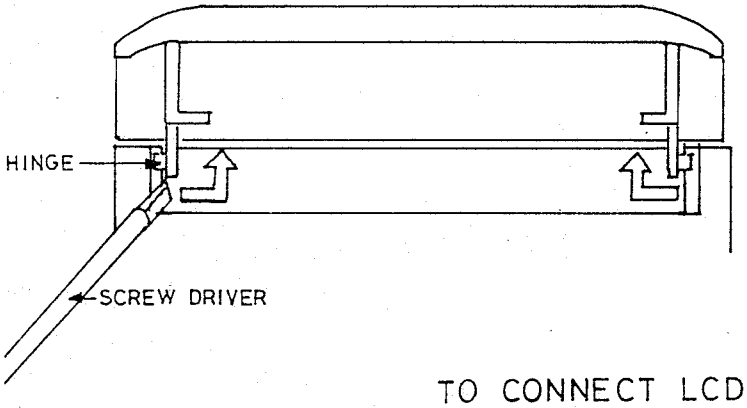
Tuning range		: 87.5 - 108 MHz
IF frequency		: 10.7 MHz
Sensitivity		: < 6 μV at 26dB S/N
Selectivity		: > 15 dB at 600kHz B.W.
IF rejection		: > 50 dB
Image rejection		: > 20 dB
MPX seperation	1 kHz	: > 20 dB
S/N ratio		: > 45 dB
Auto search stop sens.		: < 45 μV

TUNER - AM section

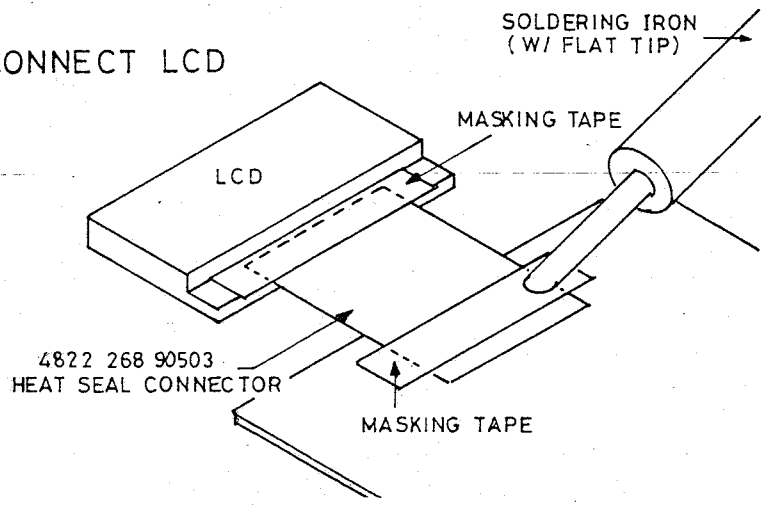
Tuning range		: 531 - 1602 kHz
IF frequency		: 450 ± 2 kHz
Sensitivity		: < 2500 μV/m 20dB S/N
Selectivity		: > 16 dB
IF rejection		: > 24 dB
Image rejection		: > 28 dB
Auto search stop sens.		
	1000 kHz	: < 7080 μV/m
	1400 kHz	: < 2500 μV/m

SERVICE HINTS

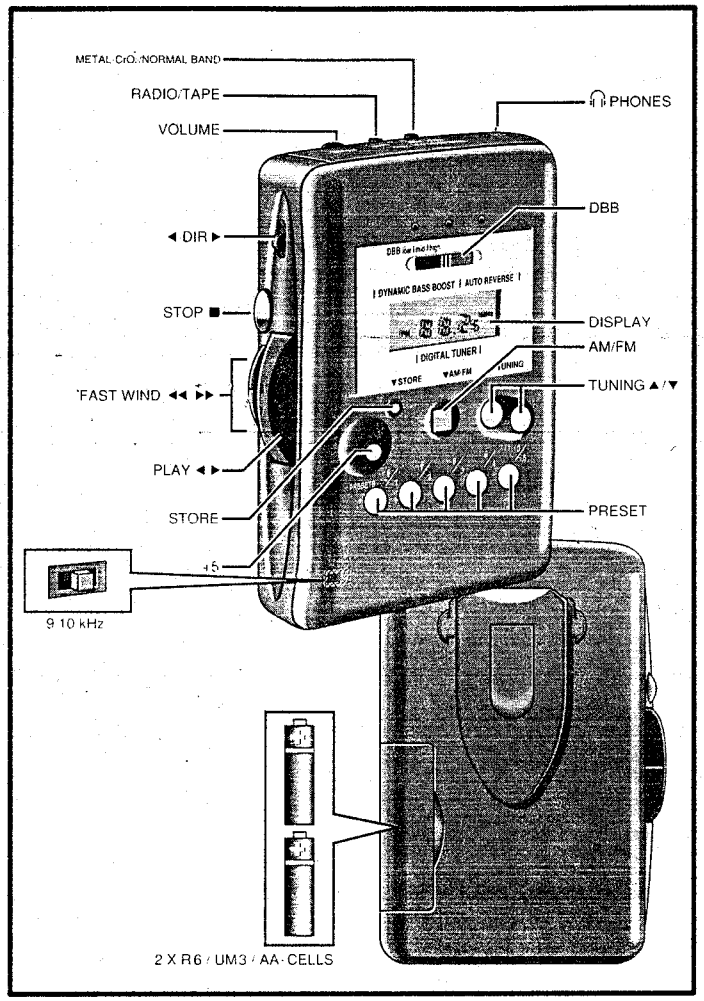
TO REMOVE CASSETTE COVER



TO CONNECT LCD



CONNECTION AND CONTROLS



CASSETTE ADJUSTMENT

Adjustment	Cassette	SK...	Tape deck	Measure on	Read on	Adjust with	Adjust to
Head azimuth	SBC420* 10kHz	Tape	Play Direction <	Jack–h/p	AC voltmeter + Oscilloscope	Left screw of P. head	Max. output L = R
		Tape	Play Direction >			Right screw of P. head	
Motor speed	SBC420* 3150Hz	Tape	Play	Jack–h/p	W & F meter	VR2	3150 Hz **a

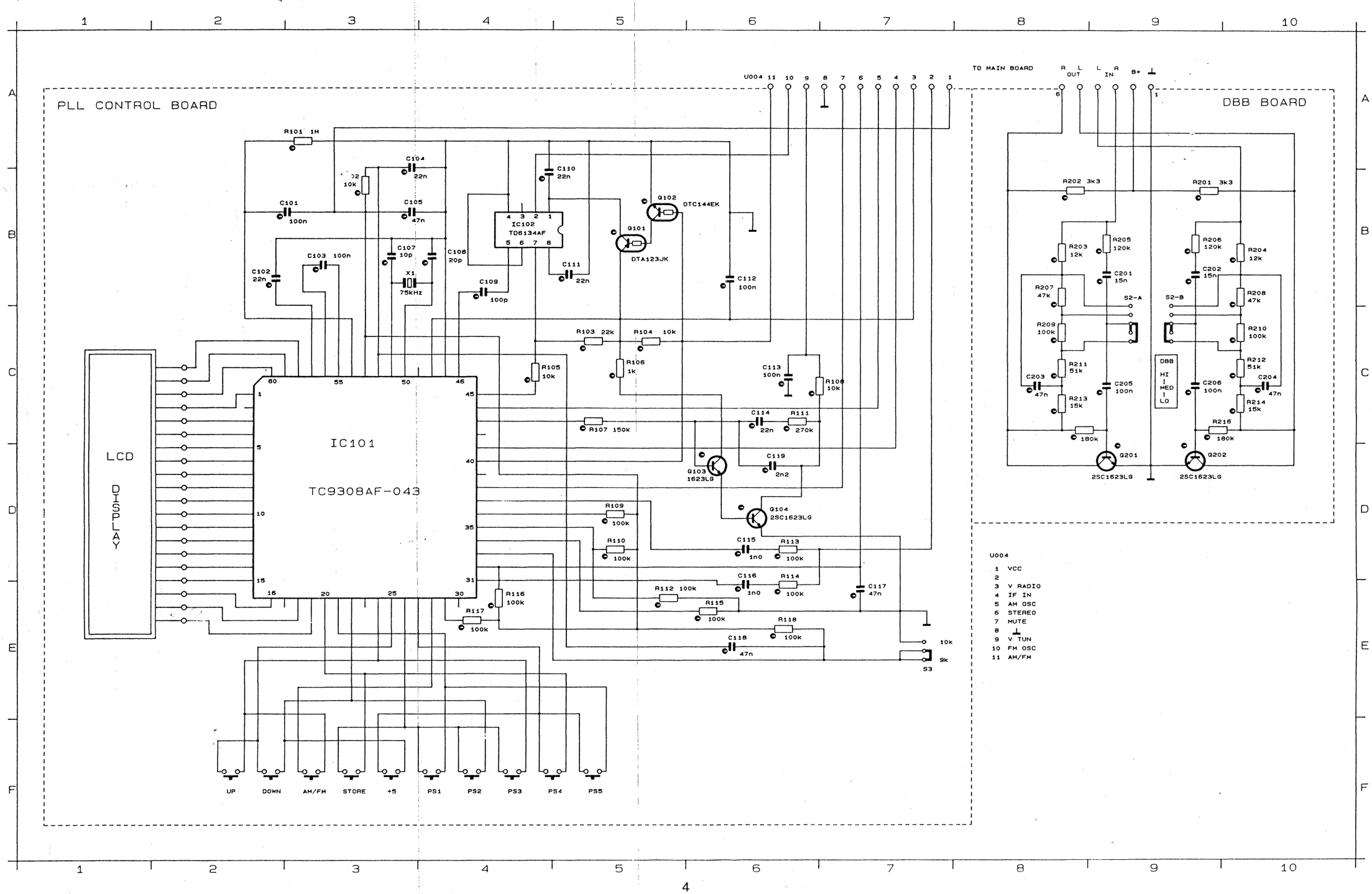
* SBC420 : 4822 397 30071

**a The maximum permissible speed deviation is ±3%.
Morever, the wow and flutter value can be read.

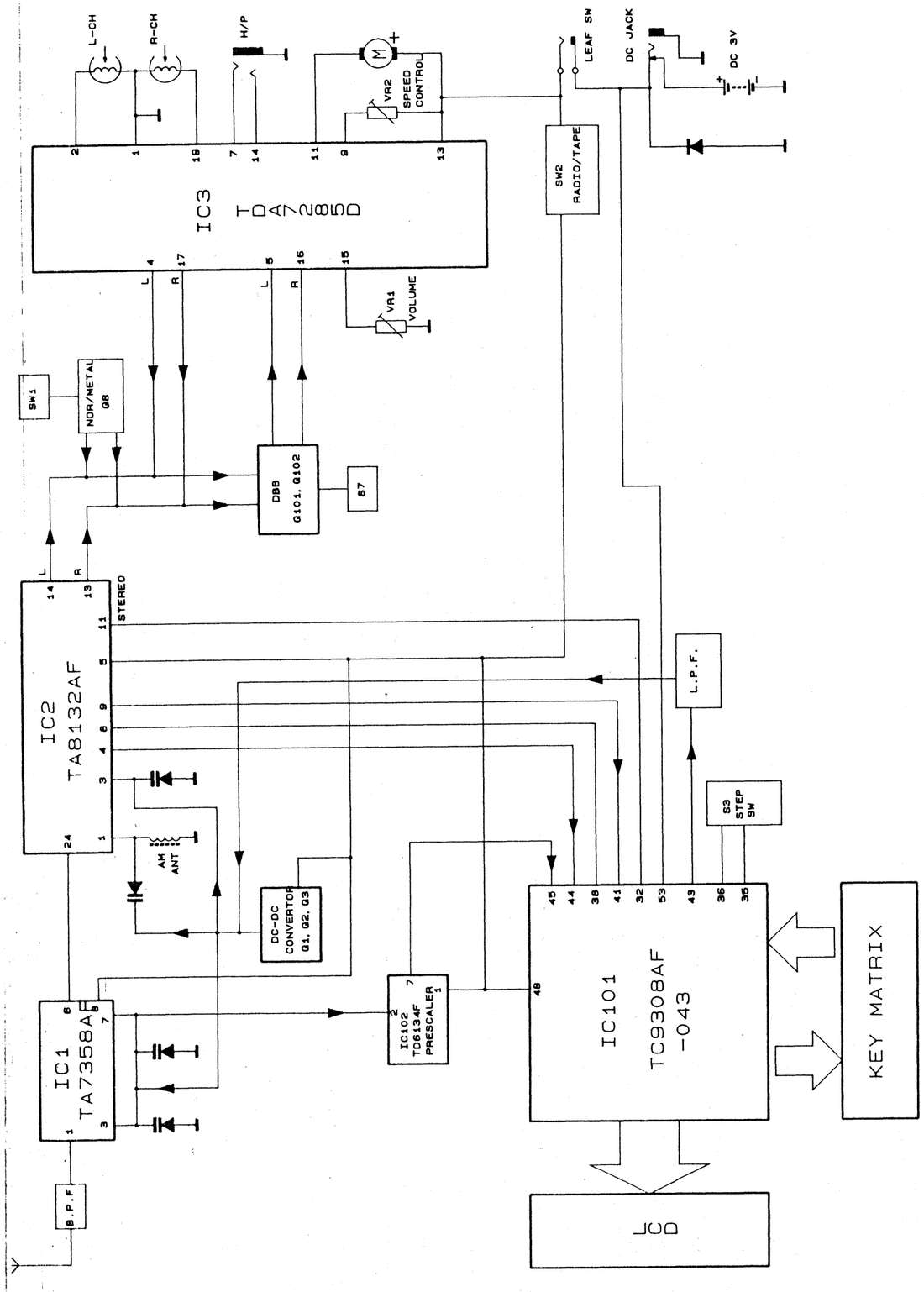
↕ Repeat

SCHEMATIC DIAGRAM – PLL CONTROL BOARD

R101	A 3	R111	C 6	R201	B 9	R211	C 8	C101	B 3	C111	B 5	C201	B 9	IC101	C 3	SW11	E 7
R102	B 3	R112	E 5	R202	B 8	R212	C 10	C102	B 2	C112	B 6	C202	B 9	IC102	B 4	SW13	C 9
R103	C 5	R113	D 6	R203	B 8	R213	C 8	C103	B 3	C113	C 6	C203	C 8	Q101	B 5	X1	B 3
R104	C 5	R114	D 6	R204	B 10	R214	C 10	C104	A 3	C114	C 6	C204	C 10	Q102	B 5		
R105	C 4	R115	E 6	R205	B 9	R215	C 8	C105	B 3	C115	D 6	C205	C 9	Q103	D 6		
R106	C 5	R116	E 4	R206	B 9	R216	C 9	C106	Not used	C116	D 6	C206	C 9	Q104	D 6		
R107	C 5	R117	E 4	R207	B 8			C107	B 3	C117	E 7			Q201	C 9		
R108	C 6	R118	E 6	R208	B 10			C108	B 4	C118	E 6			Q202	C 9		
R109	D 5			R209	C 8			C109	B 4	C119	D 6						
R110	D 5			R210	C 10			C110	A 4								

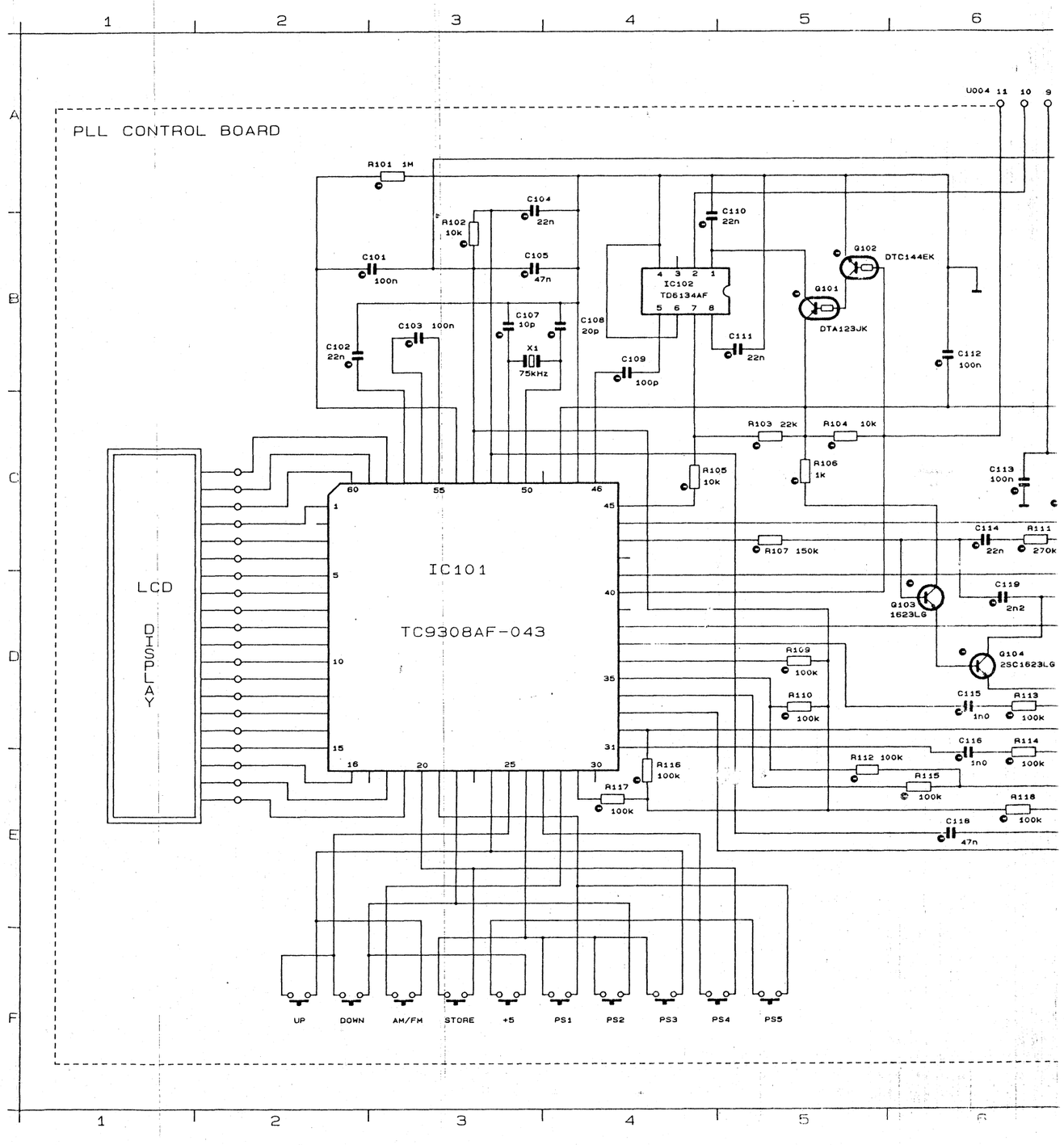


BLOCK DIAGRAM

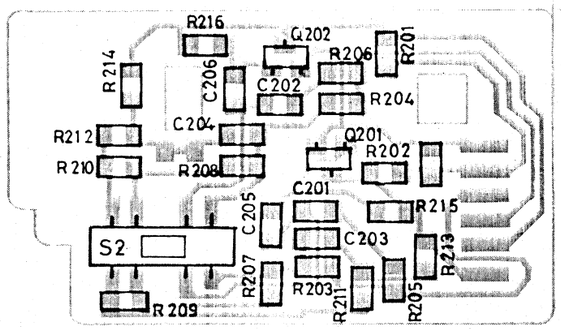


SCHEMATIC DIAGRAM – PLL CONTROL BOARD

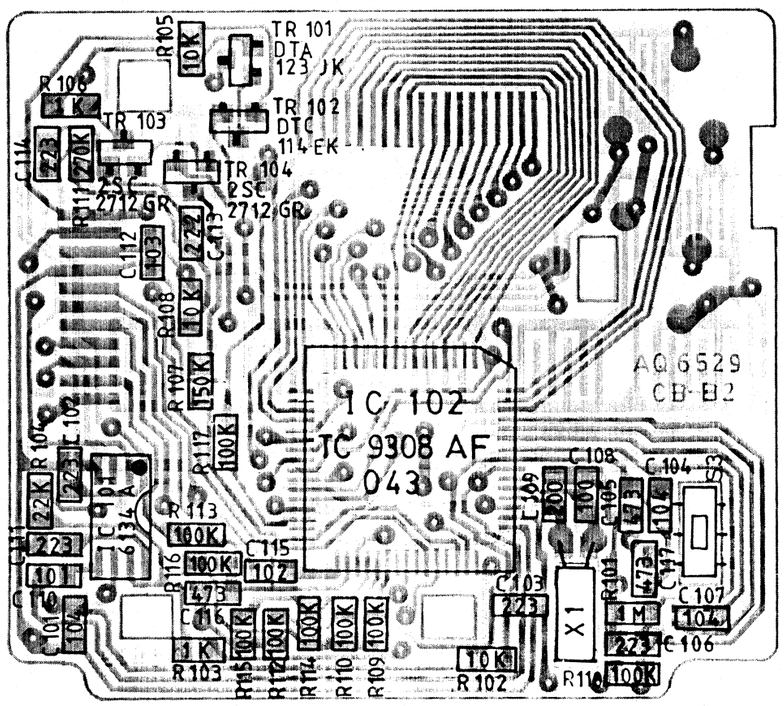
R101	A 3	R111	C 6	R201	B 9	R211	
R102	B 3	R112	E 5	R202	B 8	R212	
R103	C 5	R113	D 6	R203	B 8	R213	
R104	C 5	R114	D 6	R204	B 10	R214	
R105	C 4	R115	E 6	R205	B 9	R215	
R106	C 5	R116	E 4	R206	B 9	R216	
R107	C 5	R117	E 4	R207	B 8		
R108	C 6	R118	E 6	R208	B 10		
R109	D 5			R209	C 8		
R110	D 5			R210	C 10		



LAYOUT DIAGRAM - DBB BOARD



LAYOUT DIAGRAM - PLL CONTROL BOARD

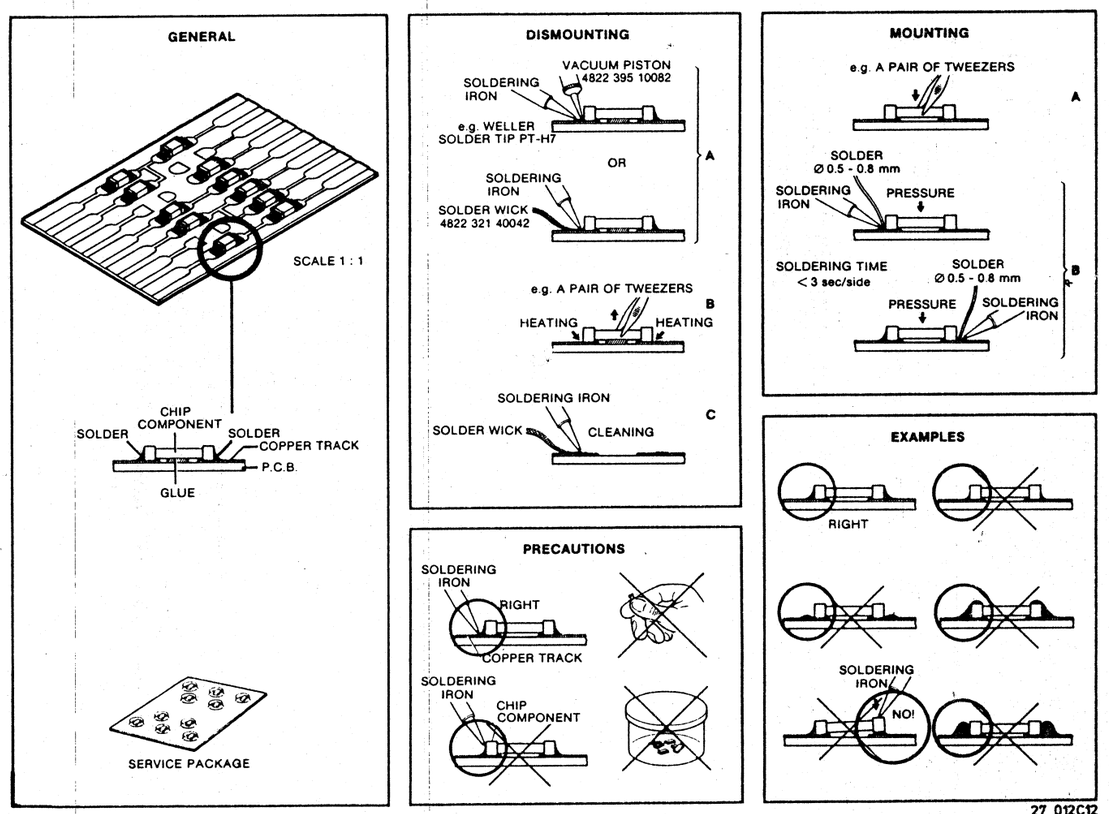


VOLTAGE CHART

IC101 TC9308AF-043					
PIN		PIN		PIN	
1	0.95	21	0	41	1.25
2	0.95	22	0	42	0.32
3	0.95	23	0	43	0.85
4	0.95	24	0	44	0
5	0.95	25	2.46	45	2.05
6	0.95	26	2.46	46	0
7	0.95	27	2.46	47	0
8	0.95	28	2.46	48	2.96
9	0.95	29	0	49	0
10	0.95	30	0	50	1.27
11	0.95	31	0	51	0.90
12	0.95	32	0	52	2.46
13	0.95	33	2.44	53	2.46
14	0.95	34	2.44	54	0.55
15	0.95	35	2.44	55	1.70
16	0.95	36	0	56	0.21
17	0.95	37	0	57	0.95
18	0.95	38	0	58	0.95
19	0.95	39	0	59	0.95
20	0	40	2.58	60	0.95

	B	C	E
Q101	2.60	0.05	0
Q102	0.05	2.90	2.92
Q103	0	2.94	0
Q104	0.50	3.23	0
Q201	0.62	1.00	0
Q202	0.62	1.00	0

IC102 TD6134AF	
PIN	
1	2.90
2	1.37
3	1.37
4	0
5	1.87
6	0
7	2.60
8	1.38



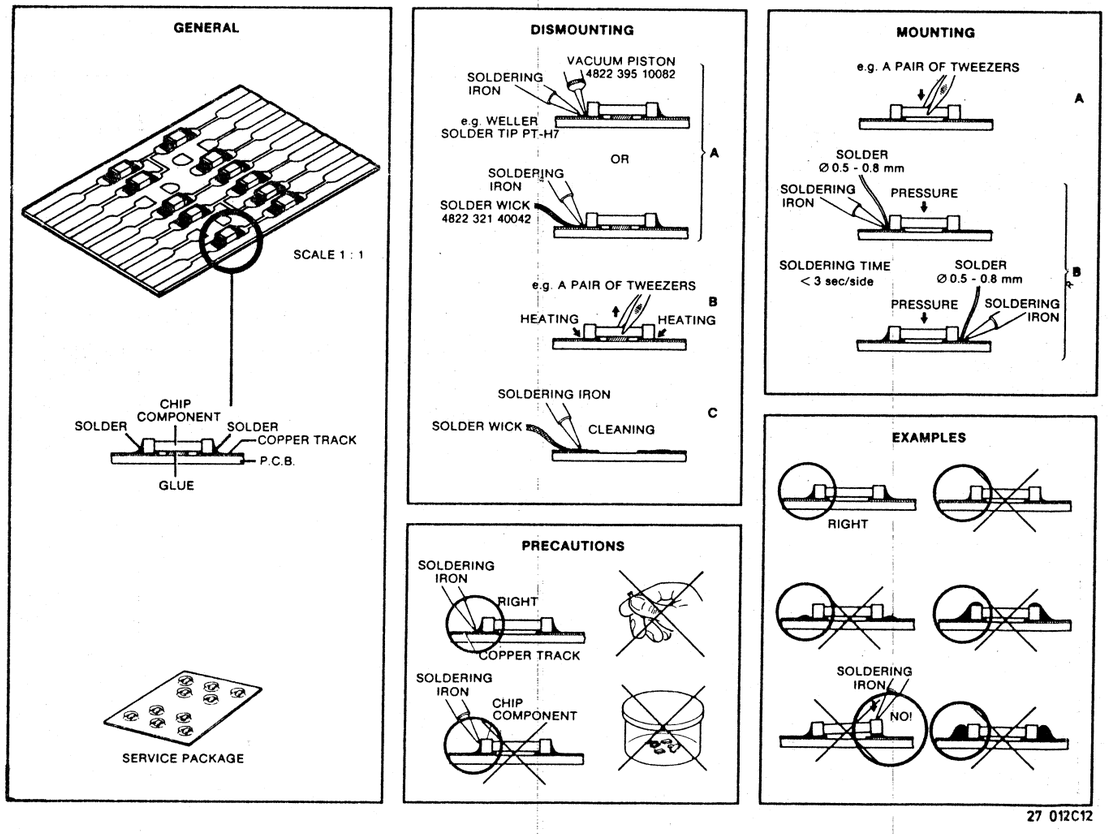
27 012C12

VOLTAGE CHART

IC101 TC9308AF-043					
PIN		PIN		PIN	
1	0.95	21	0	41	1.25
2	0.95	22	0	42	0.32
3	0.95	23	0	43	0.85
4	0.95	24	0	44	0
5	0.95	25	2.46	45	2.05
6	0.95	26	2.46	46	0
7	0.95	27	2.46	47	0
8	0.95	28	2.46	48	2.96
9	0.95	29	0	49	0
10	0.95	30	0	50	1.27
11	0.95	31	0	51	0.90
12	0.95	32	0	52	2.46
13	0.95	33	2.44	53	2.46
14	0.95	34	2.44	54	0.55
15	0.95	35	2.44	55	1.70
16	0.95	36	0	56	0.21
17	0.95	37	0	57	0.95
18	0.95	38	0	58	0.95
19	0.95	39	0	59	0.95
20	0	40	2.58	60	0.95

	B	C	E
Q101	2.60	0.05	0
Q102	0.05	2.90	2.92
Q103	0	2.94	0
Q104	0.50	3.23	0
Q201	0.62	1.00	0
Q202	0.62	1.00	0

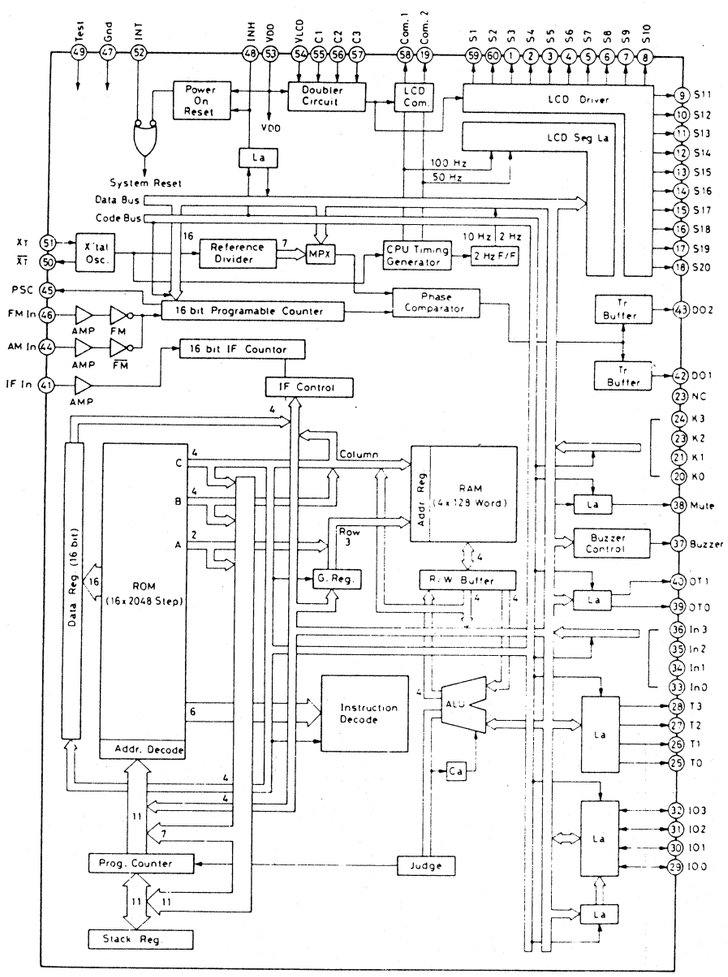
IC102 TD6134AF	
PIN	
1	2.90
2	1.37
3	1.37
4	0
5	1.87
6	0
7	2.60
8	1.38



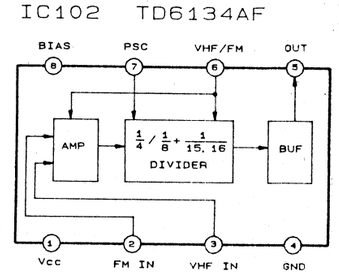
27 012C12

IC CONSTRUCTIONS

IC301 : TC9308AF-036

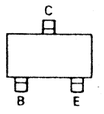


IC102 TD6134AF



TRANSISTOR LEAD IDENTIFICATION

2SB1623LG
DTA123JK
DTC144EK



B, B 1, B 2, ...Base
C, C 1, C 2, ...Collector
E ..... Emitter

RADIO ALIGNMENT

SK...	FREQUENCY	I/P	RADIO SETTING	ADJUST	O/P	SCOPE/METER
AM IF						
MW *	450 kHz	A	531 kHz	T4	1	↕ Max
AM RF						
MW *	531 kHz 1612 kHz	B	531 kHz 1612 kHz	T3	3	↕ 1.0 – 1.5V ↕ > 6.6V
	603 kHz 1404 kHz		603 kHz 1404 kHz	L3 TC2	2	↕ Max
FM IF						
FM #	10.7 MHz	C	87.5 MHz	T2	1	↕ Symmetrical
FM RF						
FM #	87.5 MHz 108.0 MHz	D	87.5 MHz 108.0 MHz	L2	3	↕ 1.8 – 2.5V ↕ > 7.0V
	88 Mhz 106 MHz		88 MHz 106 MHz	L1 TC1	2	↕ Max
						↕ Repeat

* Mod. 400 Hz 30%
\# via 10 nF + 15 E

9/10 kHz switch set to 9 kHz

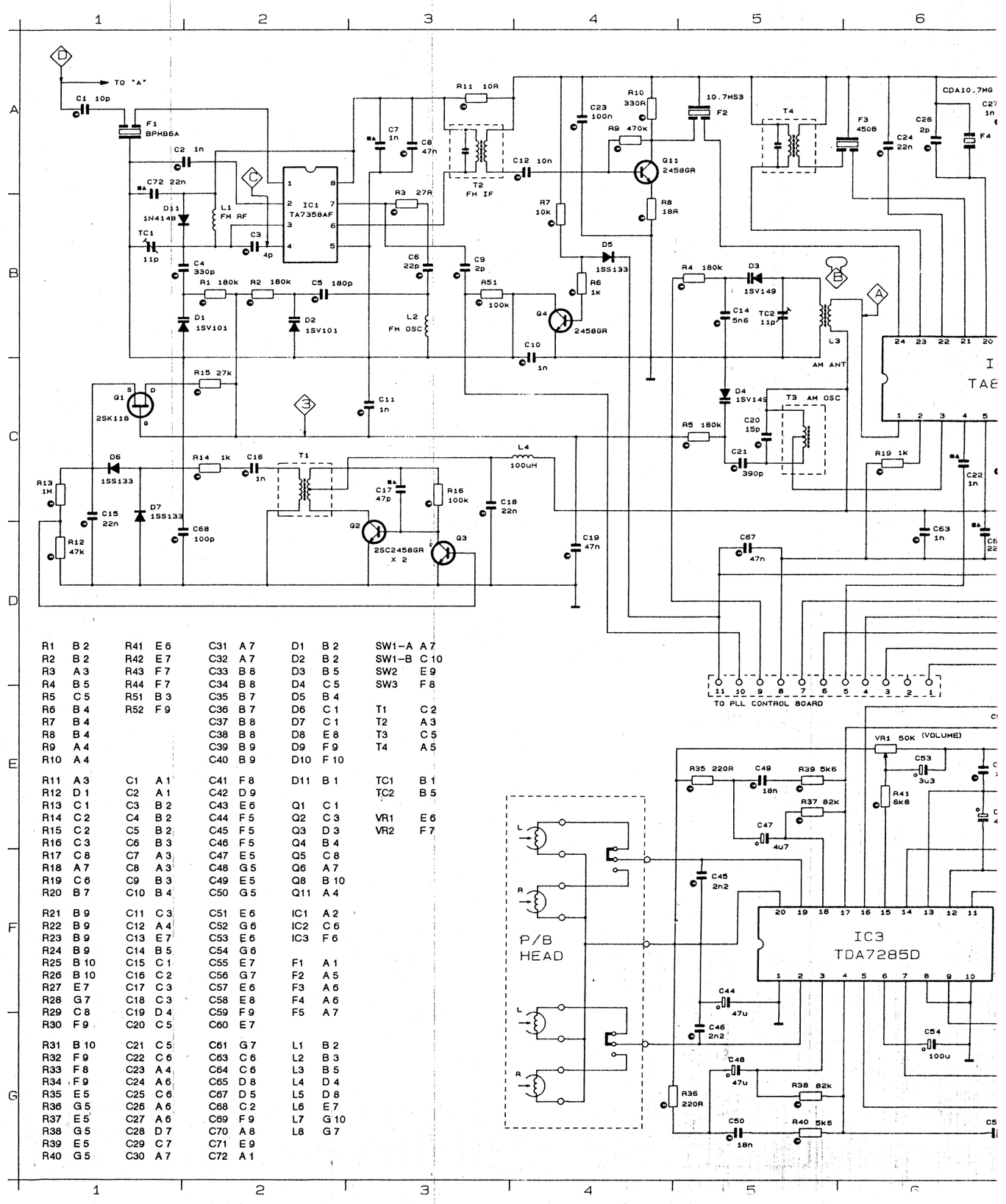
"Bei notwendigem Abgleich ist das Gerät auf die gesetzlich vorgeschriebenen Eckfrequenzen abzugleichen".

VOLTAGE CHART

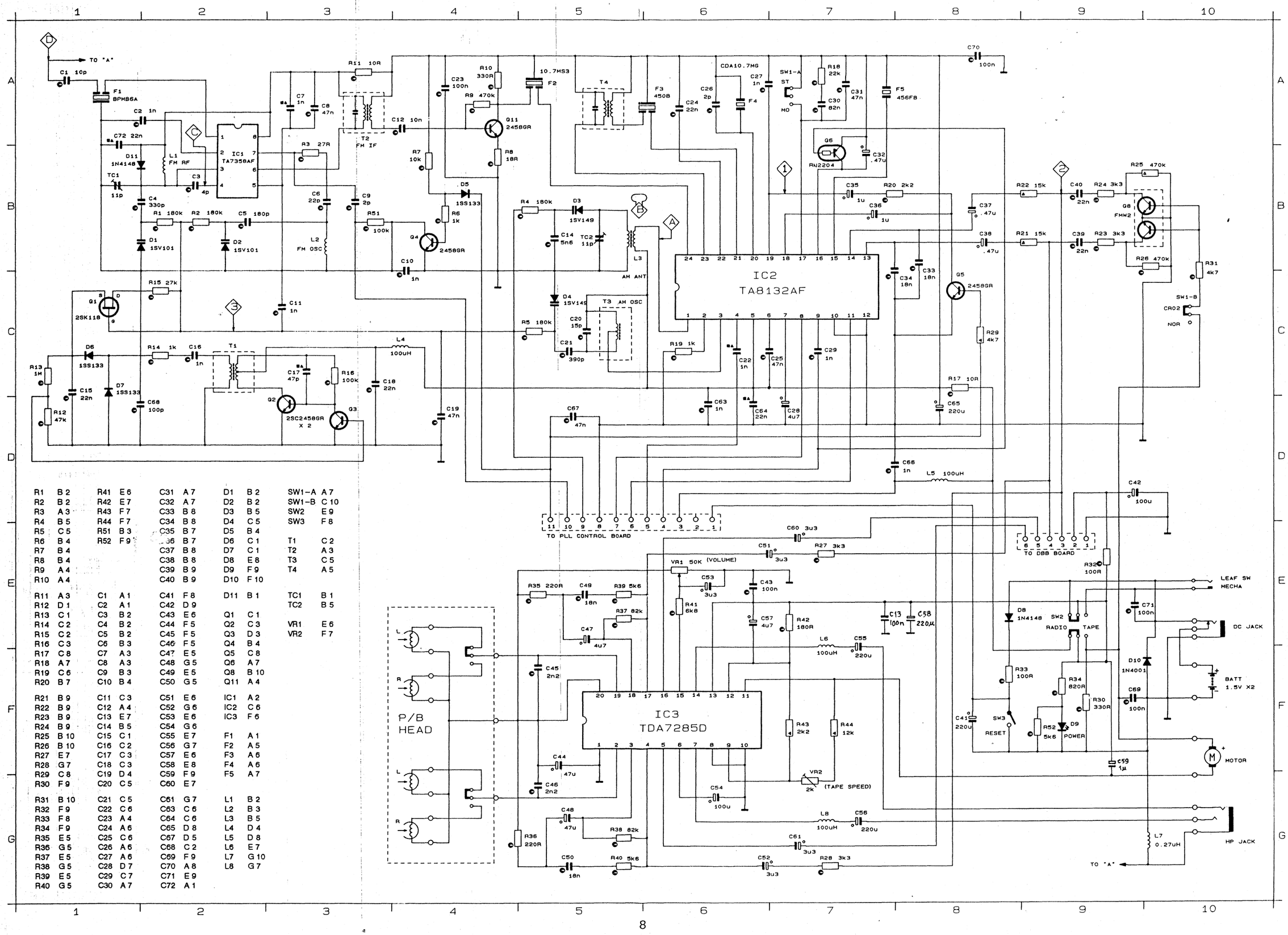
PIN	IC1	IC2 TA8132AF		IC3 TDA7285D	
	TA7358AF	FM	AM	Radio	Tape
1	0.79	2.83	2.88	0	0
2	1.54	0	0	1.51	1.49
3	2.78	2.80	2.88	1.51	1.49
4	1.50	2.83	2.54	1.42	1.40
5	0	2.83	2.88	1.51	1.49
6	2.78	2.20	2.19	2.78	2.75
7	2.25	1.20	0.82	1.42	1.40
8	2.78	0	0	0	0
9		2.83	2.86	2.53	2.49
10		0	0	0	0
11		0.01	2.42	0.10	1.37
12		0	0	2.96	2.69
13		1.00	1.00	3.00	3.00
14		1.00	1.00	1.45	1.43
15		2.11	2.37	0.40	0.43
16		1.68	2.85	1.51	1.49
17		2.00	2.58	1.44	1.42
18		0.65	0.65	1.51	1.49
19		1.07	1.28	1.51	1.49
20		1.95	2.59	1.51	1.49
21		2.82	2.87		
22		2.65	2.13		
23		2.83	2.88		
24		2.83	2.88		

	B	C	E
Q1	(G) 7.00	(S) 12.0	(D) 7.60
Q2	0.55	0.57	0
Q3	0.57	2.82	0
Q4	1.29	0	0
Q5	0	0.03	0
Q6	2.58	2.00	2.86
Q8	0	0	1.29
Q11	0.67	2.46	0.03

SCHEMATIC DIAGRAM - MAIN BOARD



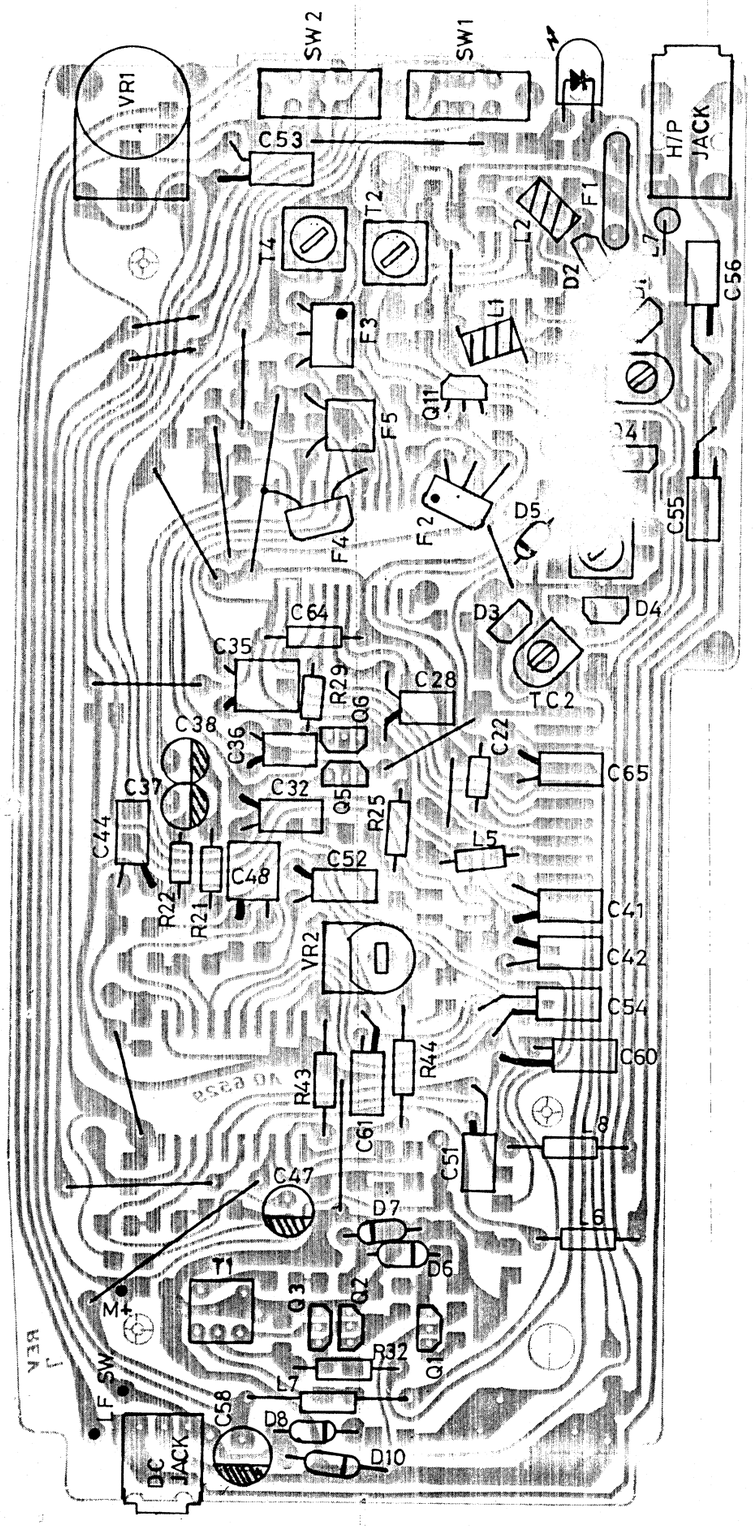
SCHEMATIC DIAGRAM - MAIN BOARD



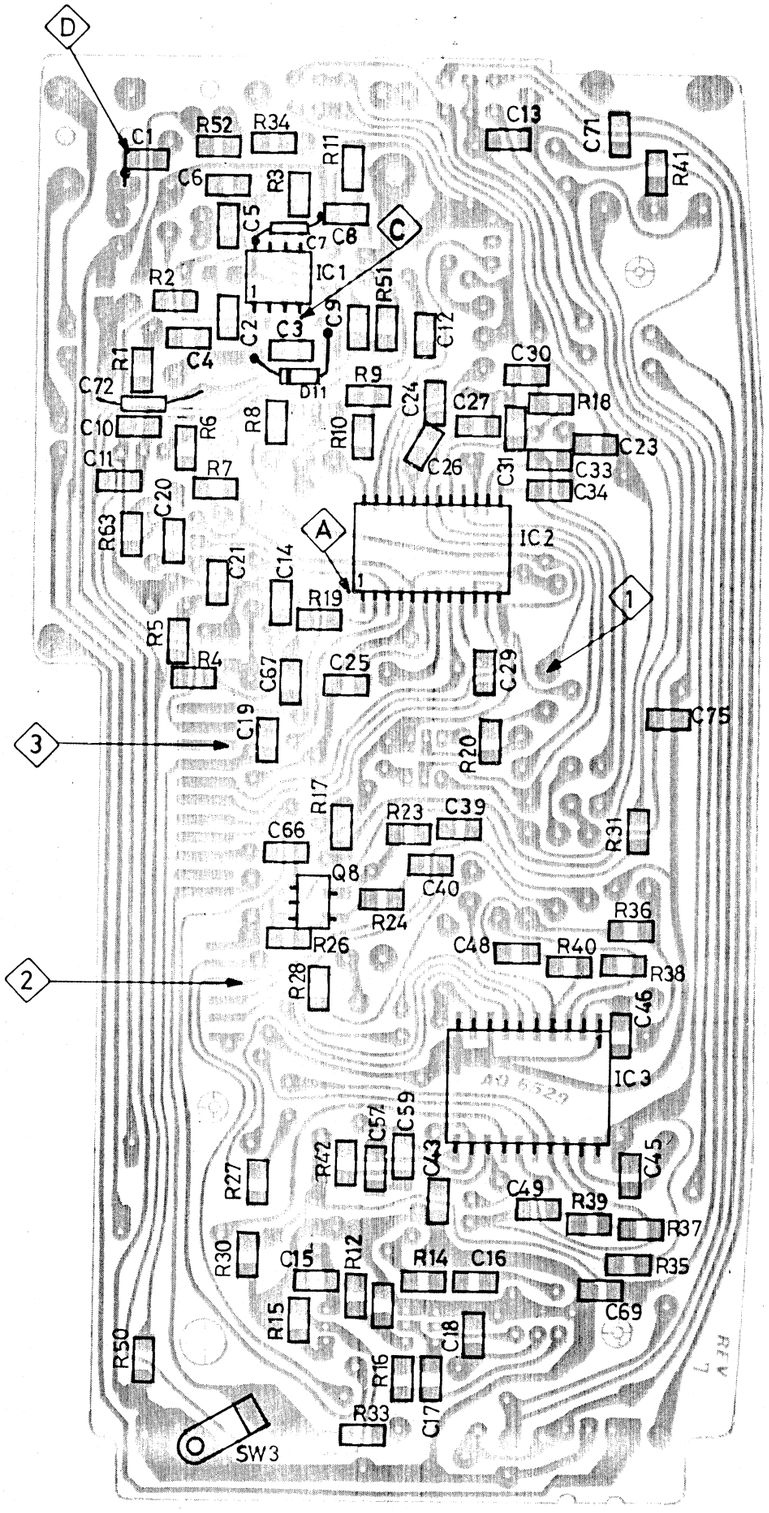
R1	B 2	R41	E 6	C31	A 7	D1	B 2	SW1-A	A 7
R2	B 2	R42	E 7	C32	A 7	D2	B 2	SW1-B	C 10
R3	A 3	R43	F 7	C33	B 8	D3	B 5	SW2	E 9
R4	B 5	R44	F 7	C34	B 8	D4	C 5	SW3	F 8
R5	C 5	R51	B 3	C35	B 7	D5	B 4		
R6	B 4	R52	F 9	C36	B 7	D6	C 1	T1	C 2
R7	B 4			C37	B 8	D7	C 1	T2	A 3
R8	B 4			C38	B 8	D8	E 8	T3	C 5
R9	A 4			C39	B 9	D9	F 9	T4	A 5
R10	A 4			C40	B 9	D10	F 10		
R11	A 3	C1	A 1	C41	F 8	D11	B 1	TC1	B 1
R12	D 1	C2	A 1	C42	D 9			TC2	B 5
R13	C 1	C3	B 2	C43	E 6	Q1	C 1		
R14	C 2	C4	B 2	C44	F 5	Q2	C 3	VR1	E 6
R15	C 2	C5	B 2	C45	F 5	Q3	D 3	VR2	F 7
R16	C 3	C6	B 3	C46	F 5	Q4	B 4		
R17	C 8	C7	A 3	C47	E 5	Q5	C 8		
R18	A 7	C8	A 3	C48	G 5	Q6	A 7		
R19	C 6	C9	B 3	C49	E 5	Q8	B 10		
R20	B 7	C10	B 4	C50	G 5	Q11	A 4		
R21	B 9	C11	C 3	C51	E 6	IC1	A 2		
R22	B 9	C12	A 4	C52	G 6	IC2	C 6		
R23	B 9	C13	E 7	C53	E 6	IC3	F 6		
R24	B 9	C14	B 5	C54	G 6				
R25	B 10	C15	C 1	C55	E 7	F1	A 1		
R26	B 10	C16	C 2	C56	G 7	F2	A 5		
R27	E 7	C17	C 3	C57	E 6	F3	A 6		
R28	G 7	C18	C 3	C58	E 8	F4	A 6		
R29	C 8	C19	D 4	C59	F 9	F5	A 7		
R30	F 9	C20	C 5	C60	E 7				
R31	B 10	C21	C 5	C61	G 7	L1	B 2		
R32	F 9	C22	C 6	C63	C 6	L2	B 3		
R33	F 8	C23	A 4	C64	C 6	L3	B 5		
R34	F 9	C24	A 6	C65	D 8	L4	D 4		
R35	E 5	C25	C 6	C67	D 5	L5	D 8		
R36	G 5	C26	A 6	C68	C 2	L6	E 7		
R37	E 5	C27	A 6	C69	F 9	L7	G 10		
R38	G 5	C28	D 7	C70	A 8	L8	G 7		
R39	E 5	C29	C 7	C71	E 9				
R40	G 5	C30	A 7	C72	A 1				

LAYOUT DIAGRAM - MAIN BOARD

TOP VIEW

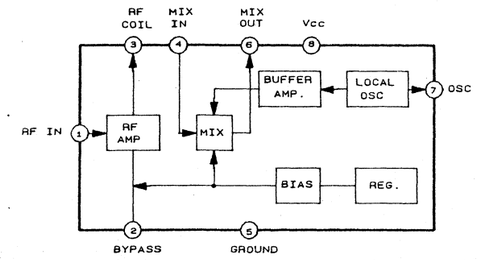


BOTTOM VIEW

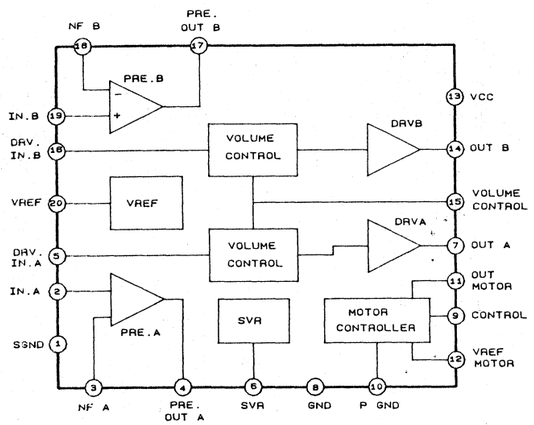


IC CONSTRUCTIONS

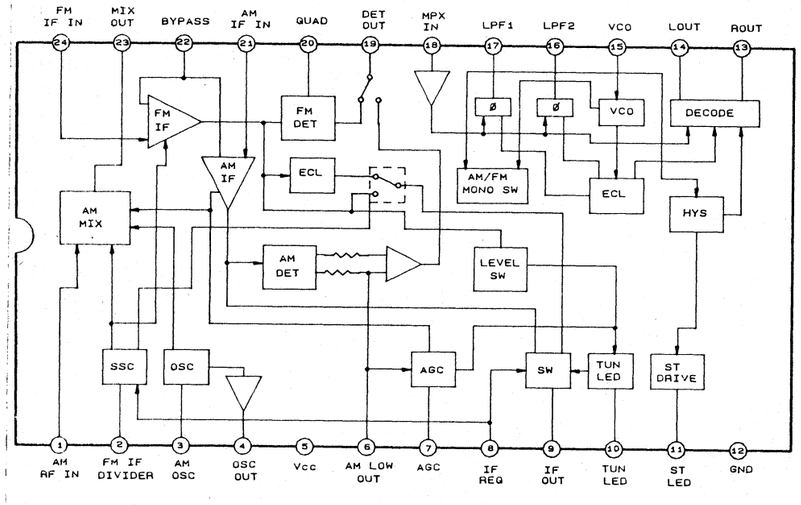
IC1 TA7358AF



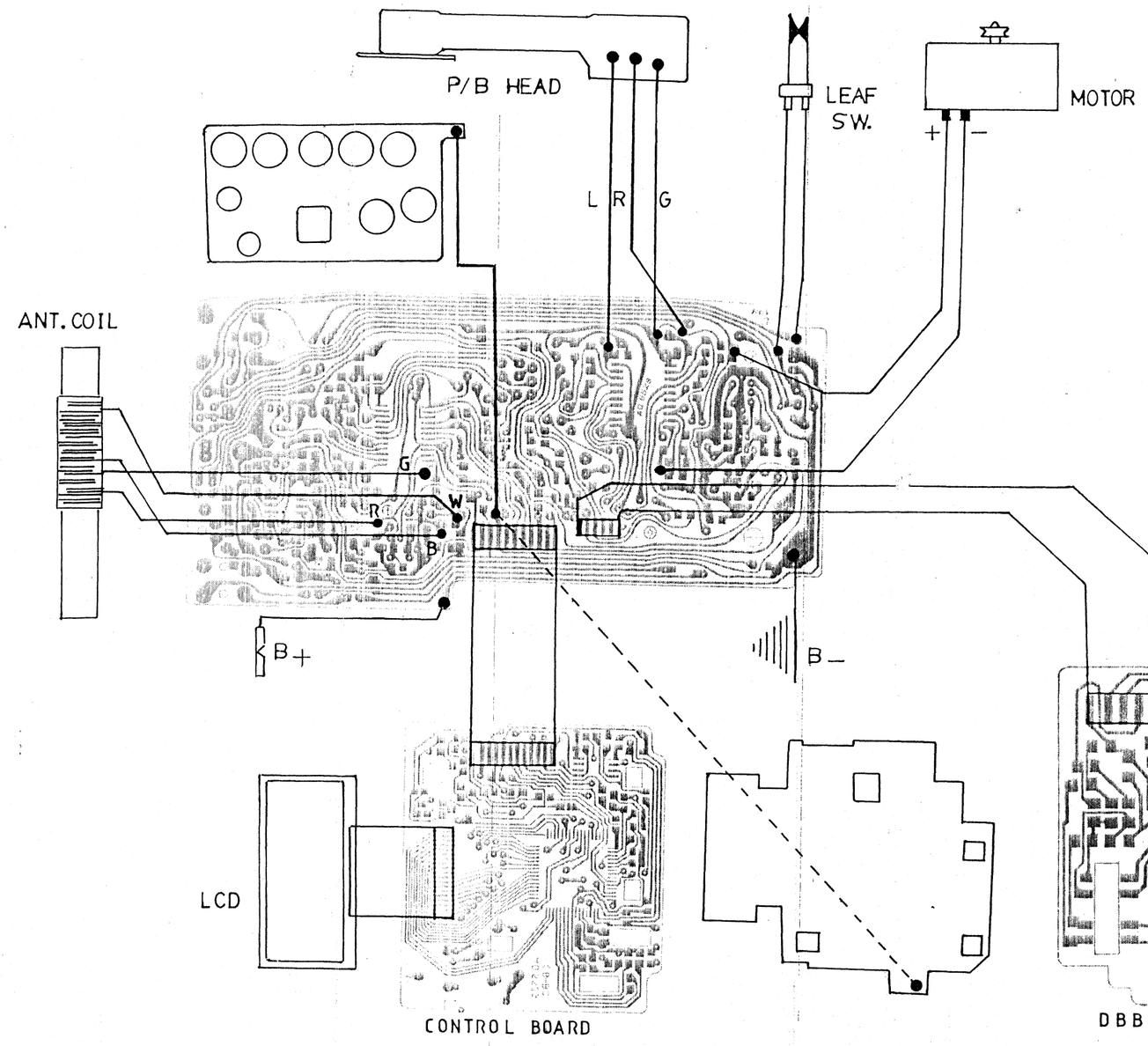
IC3 TDA7285



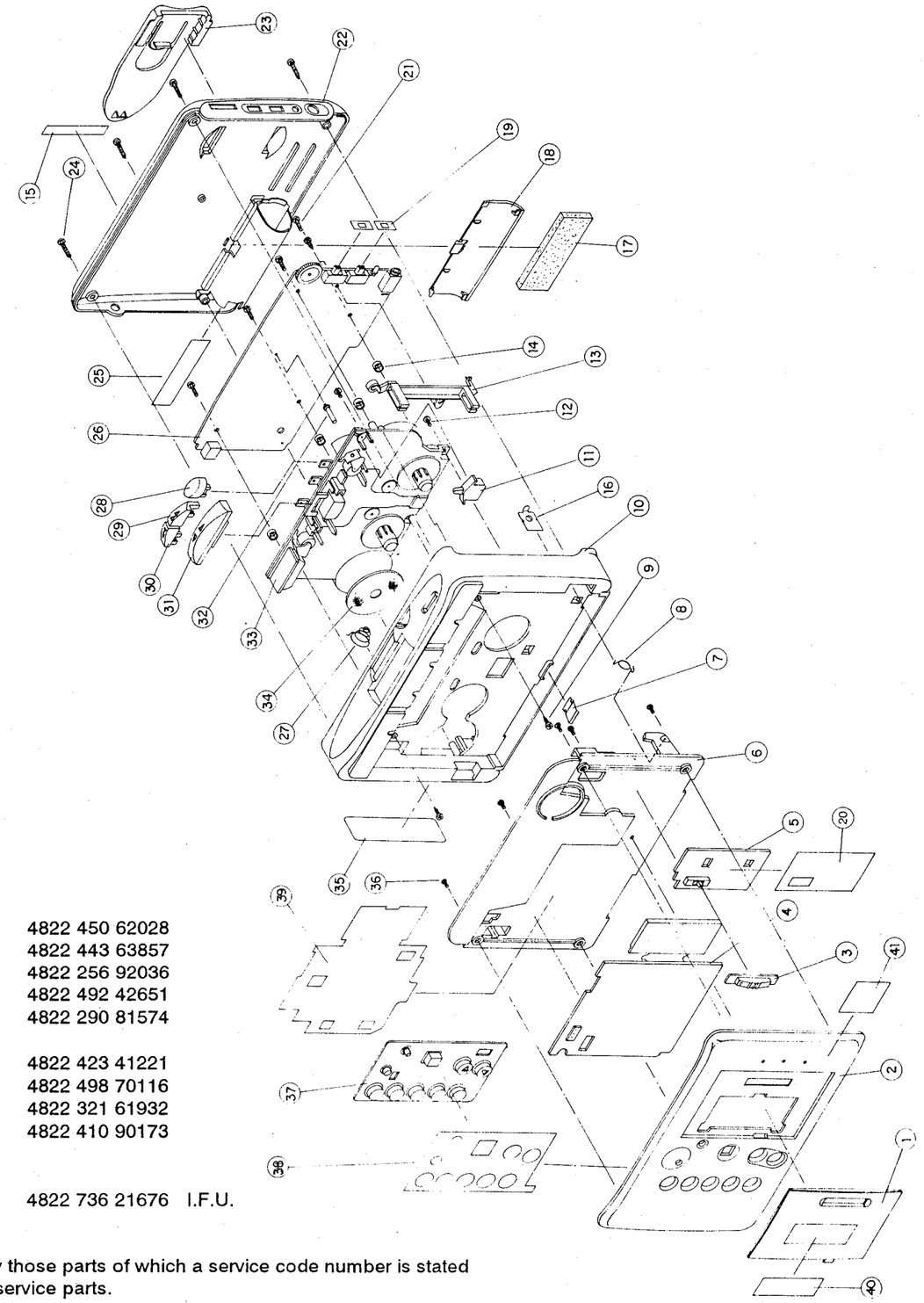
IC2 TA8132AF



WIRING DIAGRAM



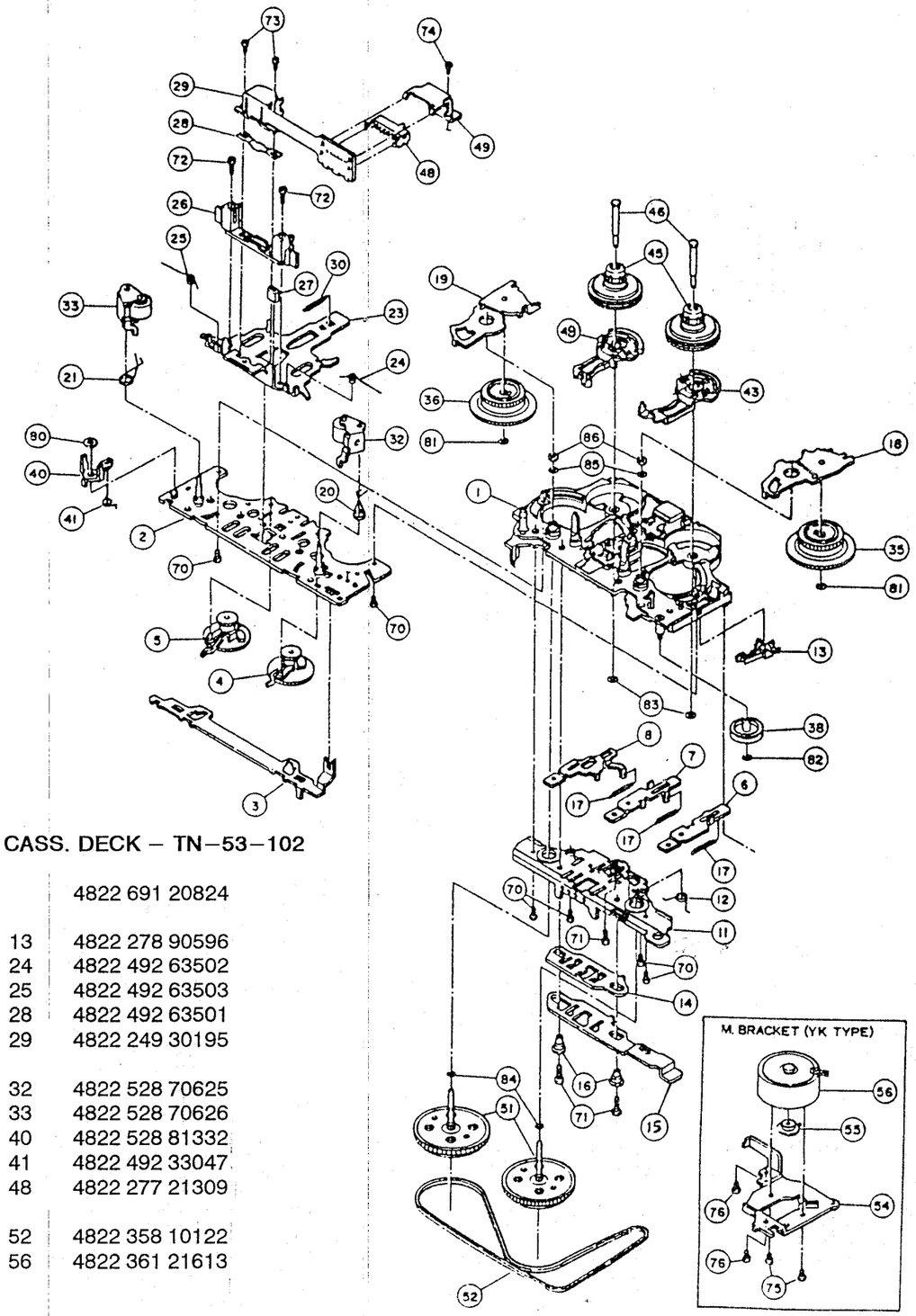
EXPLODED VIEW DIAGRAM – CABINET



01	4822 450 62028	
02	4822 443 63857	
06	4822 256 92036	
08	4822 492 42651	
16	4822 290 81574	
18	4822 423 41221	
23	4822 498 70116	
27	4822 321 61932	
37	4822 410 90173	
	4822 736 21676	I.F.U.

Only those parts of which a service code number is stated are service parts.

EXPLODED VIEW DIAGRAM - CASS. DECK



CASS. DECK – TN–53–102

	4822 691 20824	
13	4822 278 90596	
24	4822 492 63502	
25	4822 492 63503	
28	4822 492 63501	
29	4822 249 30195	
32	4822 528 70625	
33	4822 528 70626	
40	4822 528 81332	
41	4822 492 33047	
48	4822 277 21309	
52	4822 358 10122	
56	4822 361 21613	

Only those parts of which a service code number is stated are service parts.

ELECTRICAL PARTSLIST

– IC –		
IC1	4822 209 61357	TA7358AF
IC2	4822 209 30853	TA8132AF
IC3	4822 209 32159	TDA7285D
– TRANSISTORS –		
Q1	4822 130 62449	2SK118
Q2 – Q5	4822 130 60904	2SC2458–GR
Q6	4822 130 63247	RN2204
Q8	4822 130 62695	FMW2
Q11	4822 130 60904	2SC2458–GR
Q101	4822 130 63246	DTA123–TK
Q102	4822 130 60146	DTC144–EK
Q103, Q104	4822 130 60548	2SC1623L
Q201, Q202	4822 130 60548	2SC1623L
– DIODES –		
D1, D2	4822 130 81566	1SV101
D3, D4	4822 130 81673	1SV149
D5 – D7	4822 130 32778	1SS133
D8	4822 130 30621	1N4148
D9	4822 130 83333	LED 201C
D10	4822 130 31438	1N4001
D11	4822 130 30621	1N4148

– RESISTORS –		
VR1	4822 105 11122	Potm–rot. 50kB
VR2	4822 105 11123	Potm–trim 2kB
– CAPACITORS –		
TC1	4822 125 50635	Cap–trim 11pF
TC2	4822 125 50635	Cap–trim 11pF
– COILS –		
L2	4822 157 70413	Coil–FM osc
L3	4822 158 60638	Coil–MW bar assy
T1	4822 157 70414	IFT–FM
T2	4822 157 70417	IFT–FM
T3	4822 157 70415	Coil–MW osc
T4	4822 157 70416	IFT–AM
– MISCELLANEOUS –		
SW1	4822 277 30923	Sw–slide
SW2	4822 277 30922	Sw–slide
S2	4822 277 30924	Sw–slide
S3	4822 277 30925	Sw–slide
LCD	4822 130 91226	LCD display AE–9250
	4822 267 31631	Jack–headphone
	4822 267 31632	Jack–DC power

Only those parts of which a service code number is stated are service parts.

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the m of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.